

10/711,201

FIS920040274US1

IN THE CLAIMS

1. (Withdrawn) A method for predicting semiconductor yield, comprising the steps of:
 - (a) calculating yield for at least one sampling region in a set of sampling regions on a semiconductor wafer; and,
 - (b) predicting yield of a semiconductor wafer based upon at least said calculated yield of said at least one sampling region.
2. (Withdrawn) A method as in claim 1, further comprising, the step of:
partitioning a semiconductor wafer into a set of sampling regions, prior to step (a), said set comprising at least two sampling regions.
3. (Withdrawn) A method as in claim 1, wherein at least one sampling region comprises a shape of at least one of a quadrant, a slice, and a ring.
4. (Withdrawn) A method as in claim 1, wherein said at least one sampling region on said semiconductor wafer comprises at least one die and step (a) further comprises:
 - (a1) testing said at least one die in said at least one sampling region; and,
 - (a2) determining said calculated yield of said at least one sampling region based upon results of said step (a1).
5. (Withdrawn) A method as in claim 1, wherein said predicted yield of said semiconductor wafer is based further upon calculated yield of a combination of sampling regions.
6. (Withdrawn) A method as in claim 1, further comprising, the step of:

10/711,201

FIS920040274US1

(c) calculating yield for a second sampling region in said set of sampling regions on said semiconductor wafer;

wherein said second sampling region neighbors said first sampling region.

7. (Withdrawn) A method as in claim 6, further comprising, the steps of:

(d) comparing said calculated yield of said first sampling region with said calculated yield of said second sampling region; and,

(e) subsuming said second sampling region into said first sampling region whenever said calculated yield of said first sampling region is substantially similar to said calculated yield of said second sampling region.

8. (Withdrawn) A method as in claim 7, wherein step (b) further comprises, the step of:

(b1) predicting yield of said semiconductor wafer based upon said first sampling region with said subsumed second sampling region whenever said predicted yield of said first sampling region is substantially similar to said predicted yield of said second sampling region.

9. (Withdrawn) A method as in claim 1, further comprising, the steps of:

(c) comparing said calculated yield of said at least one sampling region with a target yield for said sampling region; and

(d) discontinuing further testing of said at least one sampling region, whenever said calculated yield does not substantially equal said target yield.

10. (Withdrawn) A method as in claim 1, further comprising, the step of:

(c) repeating steps (a) - (b) for a predetermined number of semiconductor wafers.

10/711,201

FIS920040274US1

11. (Withdrawn) A method as in claim 10, further comprising, the step of:

(d) predicting total yield for said predetermined number of semiconductor wafers.

12. (Withdrawn) A method as in claim 11, further comprising, the step of:

(e) comparing said predicted total yield for said predetermined number of semiconductor wafers with a target yield for said predetermined number of semiconductor wafers.

13. (Withdrawn) A method as in claim 12, further comprising, the step of:

(f) initiating a semiconductor wafer fabrication run whenever said predicted total yield does not satisfy said target yield for said predetermined number of semiconductor wafers.

14. (Withdrawn) A method as in claim 12, further comprising, the step of:

(f) altering at least one semiconductor fabrication process condition whenever said predicted total yield for said predetermined number of semiconductor wafers does not satisfy said target yield for said predetermined number of semiconductor wafers.

15. (Currently Amended) A method for calculating yield of a semiconductor wafer, comprising the steps of:

~~(a)~~ determining a first boundary for a first sampling region on a semiconductor wafer, said first sampling region comprising at least one die; and,

~~(b)~~ calculating yield of a representative sampling of said die in ~~said boundary of~~ said first sampling region.

16. (Currently Amended) A method as in claim 15, further comprising, the steps of:

10/711,201

FIS920040274US1

(e) determining a ~~latest~~ second boundary for said sampling region on said semiconductor wafer, said ~~latest~~ second boundary comprising ~~at least one of~~ at least one more die and ~~at least one~~ less die of said sampling region ~~of a previous~~ with said first boundary; and,

(d) calculating yield of a representative sampling of said die in said ~~latest~~ second boundary of said sampling region.

17. (Currently Amended) A method as in claim 16, further comprising, the step of:

(e) repeating said second determining and second calculating steps ~~(e) — (d)~~ until said calculated yield for said sampling region ~~with said latest boundary~~ satisfies a target yield for ~~at least one of~~ said sampling region and said semiconductor wafer.

18. (Currently Amended) A method as in claim 17, further comprising, the step of:

(f) repeating said first determining step through said second calculating step ~~steps~~ ~~(a) — (e)~~ for a predetermined number of sampling regions on said semiconductor wafer.

19. (Currently Amended) A method as in claim 18, further comprising, the step of:

(g) identifying a combination of sampling ~~areas~~ regions with a total predicted yield that satisfies said target yield for said semiconductor wafer.

20. (Currently Amended) A method as in claim 19, further comprising, the step of:

(h) discontinuing further testing of sampling regions that have not been identified in said combination.

10/711,201

FIS920040274US1

21. (Currently Amended) A method as in claim 17, further comprising, the step of:

(f) predicting yield of said semiconductor wafer based upon said predicted yield of said sampling region.

22. (Currently Amended) A method as in claim 18, further comprising, the step of:

(e) predicting yield of said semiconductor wafer based upon a combination of a predetermined number of sampling regions.

23. (Currently Amended) A method as in claim 18, further comprising, the step of:

(g) repeating said first determining step through said predicting step steps (a) — (f) for a predetermined number of semiconductor wafers.

24. (Currently Amended) A method as in claim 23, further comprising, the step of:

(h) predicting total yield for said predetermined number of semiconductor wafers.

25. (Currently Amended) A method as in claim 24, further comprising, the step of:

(i) comparing said total yield for said predetermined number of semiconductor wafers with a target yield for said predetermined number of semiconductor wafers.

26. (Currently Amended) A method as in claim 25, further comprising, the step of:

10/711,201

FIS920040274US1

(+) initiating a new semiconductor fabrication run whenever said total yield for said predetermined number of semiconductor wafers does not substantially equal said target yield for said predetermined number of semiconductor wafers.

27. (Currently Amended) A method as in claim 25, further comprising, the step of:

(+) altering at least one semiconductor fabrication process condition whenever said total yield for said predetermined number of semiconductor wafers does not substantially equal said target yield for said predetermined number of semiconductor wafers.

28. (Withdrawn) A computer software program adapted to execute a method comprising the steps of: (a) calculating yield for at least one sampling region in a set of sampling regions on a semiconductor wafer; and, (b) predicting yield of said semiconductor wafer based upon at least said calculated yield of said at least one sampling region.

29. (Currently Amended) A computer software program adapted to execute a method comprising the steps of:

(a) determining a first boundary for a sampling region on a semiconductor wafer, said first sampling region comprising at least one die;

(b) calculating yield of a representative sampling of said die in said first boundary of said sampling region;

(c) determining a latest second boundary for said sampling region on said semiconductor wafer, said ~~latest~~ second boundary comprising at least one of at least one more die and at least one less die of said sampling region of a ~~previous~~ said first boundary;

10/711,201

FIS920040274US1

(d) calculating yield of a representative sampling of said die in said latest second boundary of said sampling region; and,

(e) repeating said second determining and second calculating steps (e) – (d) until said calculated yield for said sampling region ~~with said latest boundary~~ satisfies a target yield for ~~at least~~ one of said sampling region and said semiconductor wafer.